Relationship

- Relationships between entities are determined by analyzing the system.
- Cardinality: Degree to which each entity participates in the relationship:
  - 1:1 – 1 department can only have 1 head; and 1 department head is assignment to 1 department.
  - 1:N or 1:M – one to many; e.g. 1 credit sale record can be assigned to 1 customer; 1 customer can have many credit sales.
  - M:N or N:N – many to many; e.g. 1 student can take many subjects; 1 subject can have many students.

- Some ER diagrams show if a relationship is:
  - Mandatory (denoted by a “I”); or
  - Optional (denoted by an “O”).

A sale can only be for 1 customer (don’t know whether this is optional or mandatory – see the 2 situations below). 1 customer can have many sales.

A sale may involve only one customer or no customer at all. A customer may have many sales or none at all.

A sale must be assigned to one and only one customer. A customer may have many sales or no sales at all.

An item may be made from many sales or none at all. A sale must involve at least one item.

A customer order may involve many goods shipment or none at all. A goods shipment must have at least a customer order.

A payment received must have 1 A/R clerk. An A/R clerk may be involve in many payments received or no payment all.